

Application No: 10/612,439

Docket No.: Q170-US1

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Page 2

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IN THE CLAIMS

Please amend the claims as follows:

1. (previously presented) A method for making a battery, comprising:

exposing olivine or nasicon to a heated carbon source gas such that carbon material from the source gas is deposited on the olivine or nasicon; and

activating a positive electrode and a negative electrode with an electrolyte, the positive electrode including the carbon material deposited on the olivine or nasicon.

2. (withdrawn) The method of claim 1, wherein the olivine or nasicon includes nasicon represented by  $A_nB_2(XO_4)_3$ , wherein

A is chosen from the group consisting of: Li, Ag, Cu, Na, Mn, Fe, Co, Ni, Cu, and Zn;

B is chosen from the group consisting of: Ti, V, Cr, Fe, and Zr;

X is chosen from the group consisting of: P, S, Si, W, Mo; and

n is between 0 and 3.

3. (previously presented) The method of claim 1, wherein the olivine or nasicon includes olivine represented by  $LiFe_{1-x}M_xPO_4$ , wherein

M is chosen from the group consisting of Mn, Co, Ti, and Ni; and

$0 \leq x \leq 1$ .

4. (previously presented) The method of claim 1, wherein the carbon source gas decomposes at a temperature between 100°C and 1300°C during deposition of the carbon material on the olivine or nasicon.

5. (previously presented) The method of claim 1, wherein the carbon source gas decomposes at a temperature between 400°C and 700°C during deposition of the carbon material on the olivine or nasicon.

Application No: 10/612,439      Docket No.: Q170-US1

Page 3

6. (previously presented) The method of claim 1, wherein the carbon source gas is chosen from the group consisting of: acetylene, butane, 1-3 butadiene, 1-butene, Cis-2-butene, Trans-2-butene, 2-2 dimethylpropane, ethane, ethylene, isobutane, isobutylene, methane, propane, toluene, propylene, and mixtures thereof.

7. (previously presented) The method of claim 1, wherein the olivine or nasicon is exposed to the carbon source gas in a furnace chosen from the group consisting of: a fluidized bed furnace, a rotatory furnace, and a static furnace.

8. (previously presented) The method of claim 1, wherein the carbon source gas is mixed with an inert gas.

9. (previously presented) The method of claim 8, wherein the inert gas is chosen from the group consisting of: nitrogen, helium, argon, and mixtures thereof.

10.-64. (canceled)

65. (previously presented) The method of claim 1, wherein the olivine or nasicon contains pores and the carbon material is deposited in the pores.

66. (previously presented) The method of claim 1, wherein the deposited carbon is <15 wt% of the deposited carbon plus the olivine or nasicon.

67. (previously presented) The method of claim 1, wherein the deposited carbon is <4 wt% of the deposited carbon plus the olivine or nasicon.

68. (previously presented) The method of claim 1, wherein the positive electrode includes a coating on a current collector, the coating including the carbon material deposited on the olivine or nasicon.

Application No: 10/612,439 Docket No.: Q170-US1

Page 4

69. (previously presented) The method of claim 68, wherein the coating further comprises a conductive additive.

70. (previously presented) The method of claim 68, wherein the current collector includes a carbon coating on aluminum.

71. (previously presented) The method of claim 70, wherein the thickness of the carbon coating on the aluminum is less than 80 microns.

72. (previously presented) The method of claim 71, wherein the thickness of the carbon coating on the aluminum is less than 30 microns.

73. (previously presented) The method of claim 72, wherein the thickness of the carbon coating on the aluminum is less than 15 microns.

74. (previously presented) The method of claim 73, wherein the thickness of the carbon coating on the aluminum is less than 10 microns.

75. (previously presented) The method of claim 74, wherein the thickness of the carbon coating on the aluminum is about 3 microns or less.

76. (previously presented) The method of claim 75, wherein the thickness of the carbon coating on the aluminum is less than 2 microns.

77. (previously presented) The method of claim 1, wherein the electrolyte is a nonaqueous electrolyte.

78. (previously presented) The method of claim 1, wherein the electrolyte includes a salt dissolved in a solvent that includes at least one linear or cyclic carbonate.

Application No: 10/612,439      Docket No.: Q170-US1

Page 5

79. (previously presented) The method of claim 78, wherein the salt is chosen from the group consisting of:  $\text{LiClO}_4$ ,  $\text{LiPF}_6$ ,  $\text{LiBF}_4$ ,  $\text{LiAsF}_6$ ,  $\text{LiCF}_3\text{SO}_3$ ,  $\text{Li}(\text{CF}_3\text{SO}_2)_2\text{N}$ ,  $\text{Li}(\text{CF}_3\text{SO}_2)_3\text{C}$ ,  $\text{LiN}(\text{SO}_2\text{C}_2\text{F}_5)_2$ , Li-methide, Li-imide, lithium alkyl fluorophosphate, lithium bis(chelato)borate, and a mixture thereof.

80. (currently amended) The method of claim 1, wherein the negative electrode includes one or more materials chosen ~~from a~~ from the group consisting of: lithium metal, graphite, other carbon,  $\text{Cu}_6\text{Sn}_5$ ,  $\text{Cu}_2\text{Sb}$ ,  $\text{MnSb}$ ,  $\text{Li}_4\text{Ti}_5\text{O}_{12}$ , and silica alloys.

81. (previously presented) The method of claim 1, wherein exposing the olivine or nasicon to the heated carbon source gas includes

    exposing the olivine or nasicon to the carbon source gas and then heating the carbon source gas to generate the carbon material and deposit the carbon material on the olivine or nasicon.